

SECTION 400524
SAFETY RELIEF VALVES

PART 1 - GENERAL

101. EXTENT

- 101.1 This Section prescribes the minimum requirements for safety relief valves and accessories. The CONTRACTOR shall conform to the requirements of this Section and to the requirements indicated on the design drawings

102. SYSTEM DESCRIPTION OR DESIGN REQUIREMENTS

102.1 Design Requirements:

- a. Valves and accessories shall conform to the requirements of the governing Code(s); in other respects, valves shall conform to the requirements of this Section.

103. REFERENCE DOCUMENTS

- 103.1 Standards, specifications, manuals, codes and other publications of nationally recognized organizations and associations are referenced herein. Methods, equipment and materials specified herein shall comply with the specified and applicable portions of the referenced documents indicated in Section 014219, in addition to federal, state or local codes having jurisdiction. References to these documents are to the latest issue date of each document, unless otherwise indicated, together with the applicable additions, addenda, amendments, supplements, thereto, in effect as of the date indicated in Section 014219.

103.2 ANSI - American National Standards Institute.

- a. B95.1 - Terminology for Pressure Relief Devices.

103.3 API - American Petroleum Institute:

- a. Standard 526 - Flanged Safety Relief Valves.
 b. Standard 527 (ANSI B147.1) - Commercial Seat Tightness of Safety Relief Valves.

103.4 ASME - American Society of Mechanical Engineers:

- a. ASME Section I - Power Boilers of the ASME Boiler and Pressure Vessel Code (Boiler External Piping).
 b. ASME Boiler and Pressure Vessel Code, Section VIII - Pressure Vessels, Division I.
 c. ASME Boiler and Pressure Vessel Code, Section VIII - Pressure Vessels, Division 2, Alternative Rules.
 d. B 31.1 - Power Piping (Non-boiler External Piping).
 e. PTC 25 - Pressure Relief Devices.

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Specification G-5301
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- 103.5 AWWA - American Water Works Association.
- 103.6 FMG - Factory Mutual Global.
- 103.7 MSS - Manufacturers Standardization from Society of the Valves and Fitting Industry Inc.
- 103.8 NFPA - National Fire Protection Association.
 - a. 20 - Standard for Installation of Centrifugal Fire Pumps.
- 103.9 UL - Underwriter's Laboratories, Inc.
- 103.10 ASME Code valves and other ASME components furnished by the CONTRACTOR shall be marked and stamped in accordance with the applicable requirements of the ASME code designated in the specification.

PART 2 - PRODUCTS

201. DESIGN REQUIREMENTS

- 201.1 Pressure relief valves shall satisfy the applicable requirements of Part PG, Articles PG-67 through PG-73 of ASME Section I; Part UG, Articles UG-125 through UG-136 of ASME Section VIII, Division 1; or Part AR, Article R-2 of ASME Section VIII, Division 2 of the ASME Boiler and Pressure Vessel Code as specified.
- 201.2 Valve assemblies shall be designed for the design pressure and temperature, set pressures and discharge flow, back pressure, capacities at full accumulation and the inlet operating conditions.
- 201.3 Valve dimensions, sizes and pressure-temperature ranges shall conform to API Standard 526. Materials and general design requirements shall also conform to this standard and to the designated ASME Code unless optional materials or design requirements are specified or approved by DISTRICT. Materials shall be suitable for the pressure, temperature and fluid conditions to which they will be subjected in service.
- 201.4 For valves with atmospheric discharge, a short, straight pipe having extra strength shall be connected with a smaller radius elbow located as close as possible to the valve outlet to minimize the force. Discharge piping shall have adequate strength.
- 201.5 Relief valves for liquid service shall be of the enclosed spring type and shall operate in a stable manner over the full range of flow rates without depending on frictional drag or mechanical damping.
- 201.6 Pilot relief valves, if required, shall be of the non-flowing type unless otherwise specified and shall satisfy the same requirements as the main safety/relief valve.

202. SOURCE QUALITY CONTROL

- 202.1 Inspection and Testing:
 - a. CONTRACTOR shall prepare and submit an Inspection and Test Plan for review and acceptance by the DISTRICT. The plan shall address all examination and testing and submittal of documentation required by the governing code(s). Tests shall be performed on all pressure relief valves furnished under this specification in accordance with the requirements of the code specified.

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203. FABRICATION REQUIREMENTS

203.1 Valve marking shall be in accordance with the governing code.

203.2 In addition to the marking specified above, each valve and separate component shall be equipped with a stainless steel metal tag permanently attached, bearing the corresponding identification number and its particular service in accordance with Section 016131.

204. FINISH REQUIREMENTS

204.1 Unless otherwise specified, valves shall be cleaned and painted in accordance with manufacturer's standard practice and as follows:

- a. Interior of all valve bodies shall be thoroughly blast cleaned using metallic grit. Grit used for stainless steel valves shall be new alumina. All grit blasting materials shall be removed prior to painting.
- b. Paint for ferrous metal valves with hot service conditions shall be heat resistant.
- c. Stainless steel valves shall not be painted.

PART 3 – EXECUTION

NOT USED

END OF SECTION 400524

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